



Application of Life cycle analysis for quality improvement of cassava based products using cleaner production technologies

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Presence of cyanogen and low post-harvest life of cassava caused to limit utilization and high waste generation. The study designed to increase economic value and minimize environmental impact of cassava, through applying Cleaner Production Technologies along life cycle.

In the study, mitigation techniques to reduce cyanide content in cassava processed products were developed. Environmental impacts of cassava products were assessed using Life cycle assessment (LCA) and Cleaner production technology options were proposed.

Mitigation techniques were hot water blanching (10 minutes), frying (160-170°C-5 minutes), and drying (60°C-12 hours). LCA reveals palm oil usage and cassava farming stages contributes most for environmental impacts. Value added products (frozen fries, hash browns), green production lines (tapioca flour and starch) and three green machineries for washing and peeling, size reduction, and starch extraction were developed.

In conclusion, cleaner production technology implementation through life cycle increases the economic value and minimises environmental impacts of cassava products.